



## TECHNICAL DATA

### MICROFAST® QUICK RESPONSE FUSIBLE ELEMENT VSW SPRINKLER VK309

The Viking Corporation, 210 N Industrial Park Drive, Hastings MI 49058

Telephone: 269-945-9501 Technical Services: 877-384-5464 Fax: 269-818-1680 Email: techsvcs@vikingcorp.com

Visit the Viking website for the latest edition of this technical data page [www.vikinggroupinc.com](http://www.vikinggroupinc.com)

#### 1. DESCRIPTION

The Viking Microfast® Quick Response Fusible Element Vertical Sidewall Sprinkler VK309 is a small thermosensitive solder link spray sprinkler available with various finishes and temperature ratings to meet design requirements. The special Polyester and Polytetrafluoroethylene (PTFE) coatings can be used in decorative applications where colors are desired. In addition, these coatings have been investigated for installation in corrosive atmospheres. (Note: FM Global has no approval classification for PTFE and Polyester coatings as corrosion resistant.)

#### 2. LISTINGS AND APPROVALS



FM Approved: Class 2020

Refer to the Approval Charts and Design Criteria for requirements that must be followed.

#### 3. TECHNICAL DATA

##### Specifications:

Available since 2007.

Minimum Operating Pressure: 7 psi (0.5 bar)

Rated to 175 psi (12 bar) water working pressure

Factory tested hydrostatically to 500 psi (34.5 bar)

Nominal K-Factor: 5.6 U.S. (80.6 metric†)

\* Metric K-factor measurement shown is in Bar. When pressure is measured in kPa, divide the metric K-factor shown by 10.0.

##### Material Standards:

Frame Casting: Brass UNS-C84400

Deflector: Brass UNS-C26000

Fusible Element Assembly: Nickel Alloy

Trigger and Support: Stainless Steel UNS-S31600

Seat and Insert Assembly: Copper UNS-C11000 and Stainless Steel UNS-S30400

Belleville Spring Sealing Assembly: Nickel Alloy, coated on both sides with PTFE Tape

Screw: Brass UNS-C36000

For PTFE Coated Sprinklers: Belleville Spring-Exposed, Screw-Nickel Plated, Pip Cap-PTFE Coated

For Polyester Coated Sprinklers: Belleville Spring-Exposed

##### Ordering Information: (Also refer to the current Viking List Price Book.)

Order Microfast® Quick Response Fusible Link Vertical Sidewall Sprinklers by first adding the appropriate suffix for the sprinkler finish and then the appropriate suffix for the temperature rating to the sprinkler base part number.

Finish Suffix: Brass = A, Chrome = F, White Polyester = M-/W, Black Polyester = M-/B, and Black PTFE = N

Temperature Suffix (°F/°C): 165°/74° = C, 205°/96° = E, and 280°/138° = G

For example, sprinkler VK309 with a Brass finish and a 165 °F/74 °C temperature rating = Part No. 13951AC

##### Sprinkler Wrenches:

A. Standard Wrench: Part No. 21475M/B (available since 2017).

B. Socket Wrench for recessed sprinklers with protective shields: Part No. 13655W/B\*\* (available since 2003)

\*\*A ½" ratchet is required (not available from Viking).

##### Sprinkler Cabinets:

A. Six-head capacity: Part No. 01724A (available since 1971)

B. Twelve-head capacity: Part No. 01725A (available since 1971)

#### 4. INSTALLATION

Refer to appropriate NFPA, FM Global, and/or any other applicable installation standards.

#### 5. OPERATION

During fire conditions, the heat-sensitive fusible element assembly disengages, releasing the seat and spring assemblies to open the waterway. Water flowing through the sprinkler orifice strikes the sprinkler deflector, forming a uniform spray pattern to extinguish or control the fire.

#### 6. INSPECTIONS, TESTS AND MAINTENANCE

Refer to NFPA 25 for Inspection, Testing and Maintenance requirements.

#### 7. AVAILABILITY

Viking Quick Response Vertical Sidewall Sprinklers are available through a network of domestic and international distributors. See The Viking Corporation web site for the closest distributor or contact The Viking Corporation.

#### 8. GUARANTEE

For details of warranty, refer to Viking's current list price schedule or contact Viking directly.





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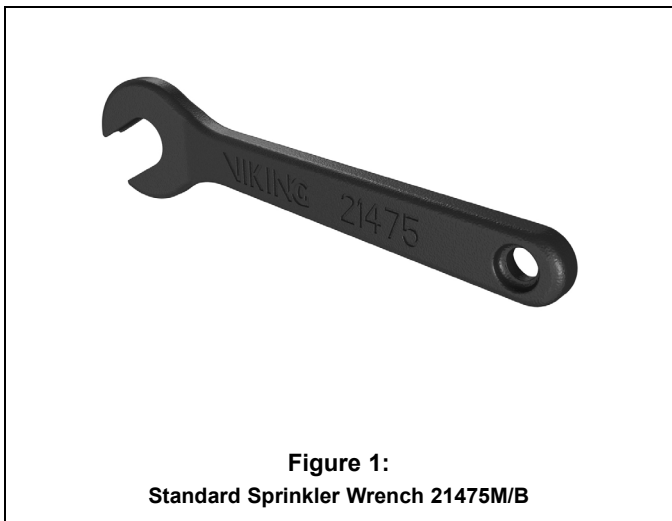
**TABLE 1: AVAILABLE SPRINKLER TEMPERATURE RATINGS AND FINISHES**

Sprinkler Temperature Classification	Sprinkler Nominal Temperature Rating <sup>1</sup>	Maximum Ambient Ceiling Temperature <sup>2</sup>	Frame Paint Color
Ordinary	165 °F (74 °C)	100 °F (38 °C)	None
Intermediate	205 °F (96 °C)	150 °F (65 °C)	White
High	280 °F (138 °C)	225 °F (107 °C)	Blue

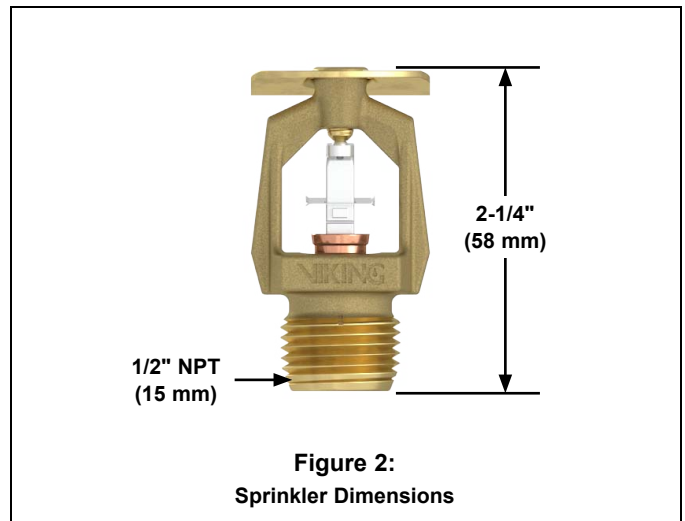
**Sprinkler Finishes:** Brass, Chrome, White Polyester<sup>3</sup>, Black Polyester<sup>3</sup>, and Black PTFE<sup>3</sup>

**Footnotes**

- Decorative sprinklers may not be color coded. The temperature rating is stamped on the deflector.
- Based on NFPA-13. Other limits may apply, depending on fire loading, sprinkler location, and other requirements of the Authority Having Jurisdiction. Refer to specific installation standards.
- For automatic sprinklers, the coatings indicated are applied to the exposed exterior surfaces only. Note that the spring is exposed on sprinklers with Polyester and PTFE coatings. For PTFE coated open sprinklers only, the waterway is coated.



**Figure 1:**  
Standard Sprinkler Wrench 21475M/B



**Figure 2:**  
Sprinkler Dimensions



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APPROVAL CHART														KEY			
Microfast® Quick Response Fusible Element VSW Sprinkler VK309														Temperature			
Base Part Number <sup>1</sup>	SIN	Maximum Pressure	Thread Size		Nominal K-Factor		Overall Length		Listings and Approvals <sup>3</sup> (Refer also to Design Criteria below.)								
			NPT	BSP	U.S.	metric <sup>2</sup>	Inches	mm	cULus	FM <sup>4</sup>	NYC	LPCB	CE	⚙️			
13951	VK309	175 psi	1/2"	15 mm	5.6	80.6	2-1/4	57	--	A1Z	See Footnote 5.	--	--	--	--	A1X ←	Escutcheon (if applicable)
<b>Approved Temperature Ratings</b>				<b>Approved Finishes</b>				<b>Approved Escutcheons</b>									
A - 165 °F (74 °C), 205 °F (96 °C), and 280 °F (138 °C)				1 - Brass and Chrome				Z - Installed with standard surface-mounted escutcheons only									
<b>Footnotes</b>																	
1. Base part number shown. For complete part number, refer to Viking's current price schedule.																	
2. Metric K-factor measurement shown is when pressure is measured in Bar. When pressure is measured in kPa, divide the metric K-factor shown by 10.0.																	
3. This table shows the listings and approvals available at the time of printing. Other approvals may be in process.																	
4. Viking vertical sidewall sprinklers may be installed pendent or upright.																	
5. Meets New York City requirements, effective July 1, 2008.																	

## DESIGN CRITERIA

(Also refer to the Approval Chart above)

### FM Approval Requirements:

Vertical Sidewall Sprinkler VK309 is FM Approved as a quick response sidewall **Non-Storage** sprinkler, as indicated in the FM Approval Guide. For specific application and installation requirements, reference the latest applicable FM Loss Prevention Data Sheets (including 2-0) and Technical Advisory Bulletins. FM Global Loss Prevention Data Sheets and Technical Advisory Bulletins contain guidelines relating to, but not limited to: minimum water supply requirements, hydraulic design, ceiling slope and obstructions, minimum and maximum allowable spacing, and deflector distance below the ceiling.

**NOTE: The FM installation guidelines may differ from NFPA criteria.**

**IMPORTANT: Always refer to Bulletin Form No. F\_091699 - Care and Handling of Sprinklers. Also refer to Form No. F\_080614 for general care, installation, and maintenance information. Viking sprinklers are to be installed in accordance with the latest edition of Viking technical data, the appropriate standards of NFPA, FM Global, LPCB, APSAD, VdS or other similar organizations, and also with the provisions of governmental codes, ordinances, and standards, whenever applicable.**